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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,907

08/28/2006

Atsushi Tanno

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EXAMINER

FISCHER, JUSTIN R

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/590,907	<b>Applicant(s)</b> TANNO ET AL.	
	<b>Examiner</b> Justin R. Fischer	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>082806</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsihlas (WO 02/085648, of record) and further in view of Yukawa (US 2003/0188817). As best depicted in Figures 1-3, Tsihlas is directed to a pneumatic tire construction comprising an annular object 40 (noise attenuating device) mounted on an inner surface of a tire tread portion. The reference further describes said object as having a varied cross-sectional area over the circumferential extent of the tire- such a construction results from the inclusion of rectangular ridges and rectangular gaps. The reference additionally teaches the use of sound absorbing materials, such as foamed rubber or plastic, to form said device (Paragraph 38). While the reference fails to expressly disclose the density of such materials, the claimed values are consistent with commonly used sound absorbing/porous materials used in the tire industry, as shown for example by Yukawa (Paragraph 26). In this instance, Yukawa teaches the preferred use of a sound absorbing material having a density between 16 and 35 kg/m<sup>3</sup>, which falls completely within the broad range of the claimed invention. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the

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time of the invention would have found it obvious to use a porous material having the claimed density in the structure of Tsihlas. Lastly, the language "partially applying compression forming to a porous material member" is directed to the method of forming the object and does not further define the structure of the claimed article. It is noted, though, that Tsihlas suggests a variety of manufacturing methods, including molding or machining (Paragraph 29).

Regarding claims 2-4, the claims are directed to the method in which the object is formed and such limitations do not further define the structure of the claimed tire.

With respect to claim 5, the variation in weight per unit length is a direct function of the dimensions of the ridges and/or gaps- one of ordinary skill in the art at the time of the invention would have readily appreciated a wide variety of embodiments, including those detailed by the claimed invention. Additionally, applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed variation (Paragraphs 27 and 31).

Regarding claim 6, Figure 2 depicts the compressed area (area with gaps) as having a significantly smaller cross-sectional area, as compared to the uncompressed area (area with ridges). One of ordinary skill in the art at the time of the invention would have found it obvious to satisfy the claimed relationship in view of such a disclosure absent any conclusive showing of unexpected results. It is emphasized that Tsihlas generally depicts a significant difference between the maximum and minimum cross-sectional areas.

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With respect to claim 7, Tsihla generally teaches a structure in which the minimum height or thickness is at least half the maximum height or thickness (Paragraph 26). As to the absolute value of such parameters, one of ordinary skill in the art at the time of the invention would have readily appreciated a wide variety of arrangements in which the maximum thickness is at least 10 mm (minimum height would then be at least 5 mm). It is emphasized that the thickness is not a critical feature in the construction of Tsihla and applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed dimensions.

As to claim 8, the gaps and ridges (compressed and uncompressed regions) are alternately arranged in the circumferential direction.

Regarding claim 9, the respective portions are rectangular.

As to claim 10, the figures of Yukawa suggest the use of a wide variety of arrangements and one of ordinary skill in the art at the time of the invention would have readily appreciated the use of several known arrangements or geometries, including a parallelogram. It is emphasized that the use of a variety of arrangements or geometries remains consistent with the desire to disturb standing waves and effectively attenuate tire cavity noise (Paragraph 23).

With respect to claim 11, Yukawa evidences the known use of polyurethane foams (Paragraph 27).

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Suzuki (JP 2002-178712) and Gregory (US 565,451)

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teach similar tire constructions having objects mounted on the inside of a tire tread region, wherein said objects have a varied cross-sectional area over the circumferential extent of the tire.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Justin Fischer  
/Justin R Fischer/  
Primary Examiner, Art Unit 1791

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July 22, 2008